

US EPA ARCHIVE DOCUMENT

CATALOG DOCUMENTATION
NATIONAL COASTAL ASSESSMENT- NORTHEAST DATABASE
YEAR 2000 STATIONS
FISH COUNTS DATA; "FISH_LEN"

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1. DATASET IDENTIFICATION

1.1 Title of Catalog document

National Coastal Assessment-Northeast Region Database
Year 2000 Stations
Fish Length and Pathology data

1.2 Authors of the Catalog entry

John Kiddon, U.S. EPA NHEERL-AED
Harry Buffum, CSC Corp.

1.3 Catalog revision date

December 29, 2003

1.4 Dataset name

FISH_LEN

1.5 Task Group

National Coastal Assessment-Northeast

1.6 Data Set Identification Code

011

1.7 Version

001

1.8 Request for Acknowledgment

EMAP requests that all individuals who download EMAP data acknowledge the source of these data in any reports, papers, or presentations. If you publish these data, please include a statement similar to: "Some or all of the data described in this article were produced by the U. S. Environmental

Protection Agency through its Environmental Monitoring and Assessment Program (EMAP)".

2. INVESTIGATOR INFORMATION (for full addresses see Section 13)

2.1 Principal Investigators

Gerald Pesch, U.S. EPA NHEERL-AED
Walter Galloway, U.S. EPA NHEERL-AED
Donald Cobb, U.S. EPA NHEERL-AED

2.2 Sample Collection Investigators

Donald Cobb, U.S. EPA NHEERL-AED

2.3 Sample Processing Investigators

Not Applicable

3. DATASET ABSTRACT

3.1 Abstract of the Dataset

The FISH_LEN data file contains the following information for each taxa of fish caught in a standard trawl at a station: the station identifier, trawl date, common name and size class of the fish taxa caught, the fork length of the fish, and the frequency and location of pathologies. Data are reported for no more than the first 30 fish per taxon caught. Scientific (Latin) names for the fish taxa can be found in the FISH_TAX table. One record is presented per taxon at a station.

3.2 Keywords for the Data Set

fish length, pathology

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

The National Coastal Assessment (NCA) is a national monitoring and assessment program with the primary goal of providing a consistent evaluation of the estuarine condition in U.S. estuaries. It is an initiative of the Environmental Monitoring and Assessment Program (EMAP), and is a partnership of several federal and state environmental agencies, including: EPA's Regions, Office of Research and Development, and Office of Water; state environmental protection agencies in the 24 marine coastal states and Puerto Rico; and the United States Geological Survey (USGS) and the National Oceanic and Atmospheric Agency (NOAA). The five-year NCA program was initiated in 2000, and is also known as the Coastal 2000 Program.

Stations were randomly selected using EMAP's probabilistic sampling framework and were sampled once during a summer index period (June to October). A consistent suite of indicators was used to measure conditions in the water, sediment, and in benthic and fish communities. The measured

data may be used by the states to meet their reporting requirements under the Clean Water Act, Section 305(b). The data will also be used to generate a series of national reports characterizing the condition of the Nation's estuaries.

4.2 Data Set Objective

The objective of the FISH_LEN file is to report the fork length and incidence of pathologies in no more than the first 30 fish per taxon collected in standard and nonstandard trawls.

4.3 Background Discussion

A two-year sampling design was employed for 2000-2001 NCA program in the Northeast. Analysts may therefore wish to consider the two years of data together.

The following Table indicates the number of fish trawls conducted in 2000 and 2001 by the state cooperatives (ST_COOP) in the northeastern states. Note that not all cooperatives conducted fish surveys in both seasons.

Count of STATION ST_COOP	YEAR 2000	2001	Grand Total
ME			
NH	23	23	46
MA-FSH	28		28
RI	2		2
RI-FSH	10		10
CT	9		9
CT-FSH	19	12	31
NY	12	29	41
NJ-C	30	38	68
NJ-DB	35	35	70
DE	14	13	27
Total	182	150	332

The information collected in the fish surveys are reported in five data files. FTRAWL presents information regarding fish trawls and abundance of unique species per standard trawl. FISH_CNT contains the number of fish per species per standard trawl. FISH_LEN specifies fork length of individual fish and the frequency and location of pathologies observed in a ship-board inspection. CRAB_LOB presents abundance and size data for crustaceans caught in standard trawls. TISSCHEM reports the concentrations of about 75 chemical analytes measured in composites samples of fish, lobsters or crabs collected at a station. The lookup table FISH_TAX lists the common and scientific names of all fish identified in standard trawls.

The FISH_LEN file reports fork lengths of the first 30 (or so) fish of a species caught in a standard trawl. (For ST_COOP = CT-FSH and MA-FSH, the lengths of all fish are reported.) The file also reports the frequency and location of several fish pathologies. The information contained in the parameters GILLDISC, PARTALB, SCIOLOS, LYMPHOC, and AMBICOL pertain only to

ST_COOP = MA-FSH. F_CLASS is a parameter used only by ST_COOP = NJ-DB and NJ-C to identify lots of fish. FSEQNUM is a sequence number identifying individuals of a species at a station. If the standard trawl did not provide a sufficient number of fish for chemical analyses, additional nonstandard trawls were conducted. Fish from these auxiliary trawls are not included in this file.

NCA planners provide two alternate locations for a station location in the event that the original location cannot be sampled. The parameter STA_ALT indicates whether the station location was the original site, first alternate, or second alternate—STA_ALT = "A", "B", or "C", respectively. Also refer to discussion in the STATIONS metadata file regarding use of this parameter during analysis of the data.

4.4 Summary of Data Set Parameters

* denotes parameters that should be used as key fields when merging data files

*STATION	Station identifier
*STAT_ALT	Station location (A, B, or C)
*EVNTDATE	Date of sampling event
FCOMNAME	Fish taxa common name
F_CLASS	Fish size classification
FSEQNUM	Fish sequence number
FLENGTH	Length (mm)
LUMPS	Fish pathology: lumps
LUMP_LOC	Location of lumps
GROWTHS	Fish pathology: growths
GRWTHLOC	Location of growths
ULCERS	Fish pathology: ulcers
ULCERLOC	Location of ulcers
FINROT	Fish pathology: fin erosion
FROT_LOC	Location of fin erosion
GILL_ER	Fish pathology: gill erosion
GE_LOC	Location of gill erosion
GILL_DC	Fish pathology: gill discoloration
GD_LOC	Location of gill discoloration
GILLERO	Gill erosion present
GILLDISC	Gill discoloration?
PARTALB	Partial albinism?
SCIOLOS	Sciolosis present?
LYMPHOC	Lymphocysis?
AMBICOL	Ambicoloration?

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition / Field Sampling

The sample collection methods used by USEPA trained field crews will be described here. NCA Standard trawls are identified by TRWLTYPE=NCA. Any significant variations by other NCA partners are noted in Section 5.1.12.

5.1.1 Sampling Objective

To collect a representative sample of fish at a station using a standard trawl. Additional nonstandard trawls were conducted when necessary to collect enough fish for chemical analyses.

5.1.2 Sample Collection and Ship-Board Processing: Methods Summary

The EPA standard fish trawl was conducted using a funnel-shaped net that filters fish from the near bottom waters. Fish were herded into the net by ground wire and an overhanging panel. Standard trawls were 10 ± 2 minutes in duration with a towing speed of 2-3 knots through the water against the prevailing current (1-3 knots relative to the bottom). An auxiliary, nonstandard trawl was performed to collect fish for tissue chemistry samples if an insufficient quantity were obtained in the standard trawl. Fish from the auxiliary trawls were used for chemical analyses only, and were not included in the standardized survey counts used to characterize the fish community structure.

All fish caught in a standard trawl were counted on board ship and immediately identified using the scientific and common names listed in the FTAXON file. Fork lengths (carapace widths for crabs and lobster) in mm were measured on approximately the first 30 individuals of each species found at a station. A visual inspection for obvious signs of pathology was conducted on all fish measured for length. A subset of fish, crabs, or lobster were randomly chosen for chemical analysis. These test organisms were tagged and frozen individually, then combined into groups of 2-10 organisms of same species for later processing as composite samples. Each group was assigned a composite ID (SAMPLEID) and sent to the analytical lab for chemical analysis.

5.1.3 Beginning Sampling Date

7 July 2000

5.1.4 Ending Sampling Date

20 October 2000

5.1.5 Sampling Platform

All program partners collected samples from various gasoline or diesel powered boats, 25 to 27 feet in length.

5.1.6 Sampling Equipment

The trawl net consisted of a funnel-shaped high-rise sampling trawl. The net includes a 16 meter tow line, a chain sweep, 5 cm mesh wings, and a 2.5 cm cod end.

5.1.7 Manufacturer of Sampling Equipment

Not applicable

5.1.8 Key Variables

Not applicable

5.1.9 Sample Collection: Calibration

The sampling gear does not require calibration.

5.1.10 Sample Collection: Quality Control

A trawl was considered void if one or more of the following conditions occurred:

1. Trawl could not be completed because of boat malfunction, vessel traffic, or major disruption of gear
2. Boat speed exceeded the prescribed range
3. The cod-end became untied
4. The net was filled with mud or debris
5. A portion of the catch was lost prior to processing
6. The tow lines became separated
7. The net was torn in a way that significantly altered net efficiency

If a successful trawl could not be performed within 1½ hours, the site was considered unsampleable. Quality assurance audits were performed to verify the identification and measurement techniques of the field crew.

5.1.11 Sample Collection: References

Strobel, C.J. 2000. Coastal 2000-Northeast Component: Field Operations Manual U. S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Atlantic Ecology Division, Narragansett, RI. EPA/620/R-00/002.

5.1.12 Sample Collection: Alternate Methods

Trawl records with the following Trawl Codes did not follow NCA standards.

TRLTYPE	Name	Description
CT	Connecticut Fish Survey Trawl	30 minutes standard
RI	Rhode Island Fish Survey Trawl	20 minutes standard
MA	MA Fish Survey Trawl (2000 only)	20 minutes standard
NH	New Hampshire modified Standard	4 minutes standard

5.2 Data Preparation and Sample Processing

All parameters reported in this file were measured aboard ship immediately following the trawl (see Section 5.1).

5.2.1 Sample Processing Objective

Not applicable

5.2.2 Sample Processing: Methods Summary

Not applicable

5.2.3 Sample Processing: Calibration

Not applicable

5.2.4 Sample Processing: Quality Control

Not applicable

5.2.5 Sample Processing: References

Not applicable

5.2.6 Sample Processing: Alternate Methods
Not applicable

6. DATA ANALYSIS AND MANIPULATIONS

6.1 Name of New or Modified Values
Not applicable

6.2 Data Manipulation Description
Not applicable

7. DATA DESCRIPTION

7.1 Description of Parameters

7.1.1 Components of the Data Set

NAME	TYPE	LENGTH	LABEL
STATION	Char	9	Station Identifier
STAT_ALT	Char	1	Station Location (A,B or C)
EVNTDATE	Num	8	Date of Sampling Event
FCOMNAME	Char	30	Fish Taxa Common Name
F_CLASS	Char	12	Size Classification
FSEQNUM	Num	4	Fish Sequence Number
FLENGTH	Num	4	Fish Length (cm)
LUMPS	Char	1	Fish Pathology: Lumps
LUMP_LOC	Char	20	Locations of Lumps
GROWTHS	Char	1	Fish Pathology: Growths
GRWTHLOC	Char	20	Locations of Growths
ULCERS	Char	1	Fish Pathology: Ulcers
ULCERLOC	Char	20	Locations of Ulcers
FINROT	Char	1	Fish Pathology: Fin Erosion
FROT_LOC	Char	20	Locations of Fin Erosion
GILL_ER	Char	1	Fish Pathology: Gill Erosion
GE_LOC	Char	20	Locations of Gill Erosion
GILL_DC	Char	1	Fish Pathology: Gill Discoloration
GD_LOC	Char	1	Locations of Gill Discoloration
GILLERO	Char	1	Gill Erosion Present
GILLDISC	Char	1	Gill Discoloration?
PARTALB	Char	1	Partial Albinism?
SCIOLOS	Char	1	Sciolorosis Present?
LYMPHOC	Char	1	Lymphocysis?
AMBICOL	Char	1	Ambicoloration?

7.1.2 Precision of Reported Values

As displayed in Section 7.1.3 and 7.1.4.

7.1.3 Minimum Value in Data set

Variable	Minimum Value
FLLENGTH	10

7.1.4 Maximum Value in Data set

Variable	Maximum Value
FLLENGTH	1733

7.2 Data Record Example

STATION	STAT_ALT	EVNTDATE	FCOMNAME	F_CLASS	FSEQNUM	FLLENGTH
DE00-0015	A	10/12/00	ATLANTIC MENHADEN		1	90
DE00-0015	A	10/12/00	ATLANTIC MENHADEN		2	100
DE00-0015	A	10/12/00	ATLANTIC MENHADEN		3	87
DE00-0015	A	10/12/00	ATLANTIC MENHADEN		4	85
DE00-0015	A	10/12/00	ATLANTIC MENHADEN		5	110

LUMPS	LUMP_LOC	GROWTHS	GRWTHLOC	ULCERS	ULCERLOC	FROT_LOC	GILL_ER	FINROT
				Y	EYE			
				Y				
				Y	MID BODY			
				Y	HEAD			
				Y				

GE_LOC	GILL_DC	GD_LOC	GILLERO	GILLDISC	PARTALB	SCIOLOS	LYMPHOC	AMBICOL

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude (Westernmost)
-75.7737 decimal degrees

8.2 Maximum Longitude (Easternmost)
-67.0939 decimal degrees

8.3 Minimum Latitude (Southernmost)
38.4521 decimal degrees

8.4 Maximum Latitude (Northernmost)
44.9456 decimal degrees

8.5 Name of area or region

The National Coastal Assessment Northeast Region covers the northeastern US coastline from Maine to Delaware

9. QUALITY CONTROL AND QUALITY ASSURANCE

9.1 Measurement Quality Objectives

9.2 Data Quality Assurance Procedures

Inspection of the sampling gear for tears or improper assemblage is done at the beginning of every trawl event.

10. DATA ACCESS

10.1 Data Access Procedures

Data can be downloaded from the web

<http://www.epa.gov/emap/nca/html/regions/index.html>

10.2 Data Access Restrictions

None

10.3 Data Access Contact Persons

John Kiddon, U.S. EPA NHEERL-AED, Narragansett, RI

401-782-3034, 401-782-3030 (FAX), kiddon.john@epa.gov

Harry Buffum, Data Manager, CSC, Narragansett, RI

401-782-3183, 401-782-3030 (FAX), buffum.harry@epa.gov

10.4 Dataset Format

ASCII (CSV) and SAS Export files

10.5 Information Concerning Anonymous FTP

Not available

10.6 Information Concerning WWW

No gopher access, see Section 10.1 for WWW access

10.7 EMAP CD-ROM Containing the Dataset

Data not available on CD-ROM

11. REFERENCES

Strobel, C.J. 2000. Environmental Monitoring and Assessment Program: Coastal 2000 - Northeast component: field operations manual. Narragansett (RI): U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Atlantic Ecology Division. EPA/620/R-00/002. 68 p.

U.S. EPA. 2001. National Coastal Assessment: Field Operations Manual. U.S. Environmental Protection Agency, Office of Research and Development, National Health and Environmental Effects Research Laboratory, Gulf Ecology Division, Gulf Breeze, FL. EPA/620/R-01/003. 72 p.

U.S. EPA. 2001. Environmental Monitoring and Assessment Program (EMAP):

National Coastal Assessment Quality Assurance Project Plan 2001-2004. U.S. Environmental Protection Agency, Office of Research and Development, National Health and Environmental Effects Research Laboratory, Gulf Ecology Division, Gulf Breeze, FL. EPA/620/R-01/002. 189 p.

12. TABLE OF ACRONYMS

AED	Atlantic Ecology Division
DE	Delaware
CSC	Computer Sciences Corporation
CT	Connecticut
EMAP	Environmental Monitoring and Assessment Program
EPA	Environmental Protection Agency
MA	Massachusetts
ME	Maine
mm	Millimeters
NCA	National Coastal Assessment
NH	New Hampshire
NHEERL	National Health and Environmental Effects Research Laboratory
NJ	New Jersey
NY	New York
NYC	New York City
PA	Pennsylvania
QA/QC	Quality Assurance/Quality Control
RI	Rhode Island
UNH	University of New Hampshire
WWW	World Wide Web

13. PERSONNEL INFORMATION

Sandra Benyi, Research Biologist
U.S. Environmental Protection Agency, NHEERL-AED
27 Tarzwell Drive, Narragansett, RI 02882-1197
401-782-3041, 401-782-3030 (FAX), benyi.sandra@epa.gov

Harry Buffum, Database Manager, Computer Sciences Corporation.
U.S. Environmental Protection Agency, NHEERL-AED
27 Tarzwell Drive, Narragansett, RI 02882-1197
401-782-3183, 401-782-3030 (FAX), buffum.harry@epa.gov

Don Cobb, Chemist
U.S. Environmental Protection Agency, NHEERL-AED
27 Tarzwell Drive, Narragansett, RI 02882-1197
401-782-9616, 401-782-3030 (FAX), cobb.donald@epa.gov

Walter Galloway, NCA Project Officer
U.S. Environmental Protection Agency, NHEERL-AED
27 Tarzwell Drive, Narragansett, RI 02882-1197
401-782-3096, 401-782-3030 (FAX), galloway.walt@epa.gov

Steve Hale, EMAP Information Manager
U.S. Environmental Protection Agency, NHEERL-AED
27 Tarzwell Drive, Narragansett, RI 02882-1197
401-782-3048, 401-782-3030 (FAX), hale.stephen@epa.gov

Melissa Hughes, Data Librarian, Computer Sciences Corporation.
U.S. Environmental Protection Agency, NHEERL-AED
27 Tarzwell Drive, Narragansett, RI 02882-1197
401-782-3184, 401-782-3030 (FAX), hughes.melissa@epa.gov

John Kiddon, AED Oceanographer
U.S. Environmental Protection Agency, NHEERL-AED
27 Tarzwell Drive, Narragansett, RI 02882-1197
401-782-3044, 401-782-3030 (FAX), kiddon.john@epa.gov

Joe LiVolsi, AED QA Officer
U.S. Environmental Protection Agency, NHEERL-AED
27 Tarzwell Drive, Narragansett, RI 02882-1197
401-782-3163, 401-782-3030 (FAX), livolsi.joseph@epa.gov

Gerald Pesch, Director Northeast NCA and Project Officer
U.S. Environmental Protection Agency, NHEERL-AED
27 Tarzwell Drive, Narragansett, RI 02882-1197
401-782-3007, 401-782-3030 (FAX), pesch.gerald@epa.gov

Charlie Strobel, AED Analyst
U.S. Environmental Protection Agency, NHEERL-AED
27 Tarzwell Drive, Narragansett, RI 02882-1197
401-782-3180, 401-782-3030 (FAX), strobel.charles@epa.gov

Hal Walker, AED Analyst
U.S. Environmental Protection Agency, NHEERL-AED
27 Tarzwell Drive, Narragansett, RI 02882-1197
401-782-3134, 401-782-3030 (FAX), walker.henry@epa.gov